UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,053	10/14/2003	William Arthur Welsh	67008-104; S-5654	5716

74187 7590 03/08/2011
Carlson, Gaskey, & Olds, P.C./Sikorsky
400 West Maple Road, Suite 350
Birmingham, MI 48009

EXAMINER	
NGUYEN, XUAN LAN T	
ART UNIT	**PAPER NUMBER**
3657	
MAIL DATE	**DELIVERY MODE**
03/08/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM ARTHUR WELSH and MICHAEL S. TOROK

Appeal 2009-010742
Application 10/685,053
Technology Center 3600

Before: LINDA E. HORNER, STEVEN D.A. McCARTHY, and
STEFAN STAICOVICI, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

---

[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

William Arthur Welsh and Michael S. Torok (Appellants) seek our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 12-17, 20, 21, and 29-32.[2] Claims 24-28, 33, and 34 have been allowed, and the Examiner has indicated claims 18, 22, and 23 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.[3] Claims 1-11 and 19 are cancelled. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

THE INVENTION

Appellants' claimed invention relates to vibration isolators for minimizing vibrations produced in a rotating system. Spec. 1:3-4. Claim 12, reproduced below, is representative of the subject matter on appeal.

> 12. A vibration isolation system for reducing vibrations in a rotating system which rotates about an axis of rotation, comprising:
>
> an enclosed chamber mounted to the rotating system for rotation about said axis of rotation independent of the rotating system;
>
> a Magneto Rheological Fluid (MRF) at least partially filling said enclosed chamber; and
>
> an electromagnetic field generation system mounted adjacent said enclosed chamber to azimuthally vary a viscosity

---

[2] Appellants' *Status of Claims* mistakenly lists claims 12-18 and 20-34 as appealed; however, Appellants' *Grounds of Rejection to be Reviewed on Appeal* correctly reflects that only the rejection of claims 12-17, 20, 21, and 29-32 is appealed. App. Br. 2-3.

[3] *See* Advisory Action dated September 18, 2006.

> of said MRF and distribute said MRF within said enclosed chamber to reduce a vibratory load in said rotating system.

THE REJECTION

Appellants seek review of the Examiner's rejection of claims 12-17, 20, 21, and 29-32 under 35 U.S.C. § 103(a) as unpatentable over Hooper (US 3,219,120; issued November 23, 1965) and Case (US 6,606,922 B2; issued August 19, 2003).

CONTENTIONS AND ISSUE

The Examiner found that Hooper discloses a vibration isolation system that includes an enclosed chamber (housing 22) mounted to the rotating system for rotation about an axis of rotation independent of the rotating system. Ans. 3. The Examiner found that Case discloses a vibration isolation system that includes an enclosed chamber (chamber 282) at least partially filed with MRF (fluid 284) and an electromagnetic field generation system (electromagnets 290) mounted adjacent the chamber to azimuthally vary a viscosity of the MRF and distribute the MRF within the enclosed chamber to reduce a vibratory load in the rotating system. Ans. 3-4. The Examiner concluded it would have been obvious to modify Hooper's vibration isolation system with Case's vibration isolation system "in order to dampen a wide range of frequency at the same time reducing internal moving parts which in turn would reduce the overall weight of the device." Ans. 4.

Appellants argue claims 12-17, 20, 21, and 29-32 as a group. App. Br. 3-11. We select claim 12 as the representative claim, and claims 13-17, 20, 21, and 29-32 stand or fall with claim 12. *See* 37 C.F.R. § 41.37(c)(1)(vii). Appellants make a variety of arguments that there is "absolutely no teaching, suggestion, or motivation to modify *Hooper* in view of *Case*" and that even if combined, the combination would not result in an electromagnetic field generation system to azimuthally vary a viscosity of the MRF and distribute the MRF within the enclosed chamber. App. Br. 3-10.

The issue presented by this appeal is whether a person of ordinary skill in the art would have combined Hooper and Case as proposed by the Examiner, and whether such a combination would result in the subject matter of independent claim 12.

ANALYSIS

Appellants' argument that there is "absolutely no" teaching, suggestion, or motivation to make the proposed modification is unpersuasive in that it fails to address the rationale provided by the Examiner, namely, to dampen a wide range of frequency, to reduce internal moving parts, and to reduce the overall weight of the device. *See* Ans. 4. We examine the references in light of Appellants' arguments and the Examiner's proposed modification and rationale.

Hooper discloses a vibration absorber 14 for a helicopter 10 that utilizes two circular counter-rotating weight means to reduce vibratory motion. Hooper, col. 1, ll. 52-53, 61-65; col. 3, ll. 11-15; figs. 1-3.

Case discloses that prior art devices for reducing rotational vibrations using installed additional weights cannot dynamically cover a wide range of imbalance conditions, cannot fine tune load balancing, and are quite heavy. Case, col. 1, l. 62 – col. 2, l. 4; col. 2, ll. 22-30. Case discloses a system and method for reducing vibrations on a driven shaft that adds comparatively little weight and rotational inertia to the rotating machine, is capable of large scale correction without sacrificing the resolution required for fine tuning, and is comparatively simple in design and manufacture. Case, col. 1, ll. 12-18; col. 2, ll. 41-49. A person of ordinary skill in the art would recognize that Hooper's vibration reduction system that utilizes added weights could be improved by Case's technique for vibration reduction in a rotating system in the same way because Case's technique would add little weight to Hooper's rotating machine, would allow for both large scale correction and fine tuning, and would be simple in design and manufacture, i.e., reduce internal moving parts. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) ("if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill."). Consequently, the Examiner's rationale is reasonable.

Appellants' contention that Hooper's mechanical gear arrangement is "not amenable to incorporation of an MRF fluid system" (*See* App. Br. 7; Reply Br. 2) does not go so far as to say the proposed modification is beyond the level of skill in the art. *See, e.g., Leapfrog Ent., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161-62 (Fed. Cir. 2007) (finding that the combination of familiar elements according to known methods was obvious when it did no more than yield predictable results and when the patentee presented no evidence that the combination was "uniquely challenging or difficult for one of ordinary skill in the art" or "represented an unobvious step over the prior art.") (citing *KSR*, 550 U.S. at 418). *See also KSR*, 550 U.S. at 418 (it is proper to "take account of the inferences and creative steps that a person of ordinary skill in the art would employ."); *id.* at 421 ("[a] person of ordinary skill is also a person of ordinary creativity, not an automaton."). Further, the contention is also unpersuasive because it is not supported by evidence. *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) (Appellants' arguments do not take the place of evidence).

Appellants' argument that Hooper is directed to an aircraft which receives vibration from multiple axes of freedom while Case is fixed during operations is unconvincing because it is not commensurate in scope with claim 12. *See* App. Br. 7; Reply Br. 2. Claim 12 is directed to a vibration isolation system that reduces a vibratory load in a rotating system; however, claim 12 does not call for the system to receive vibration from multiple axes of freedom[4], nor is claim 12 limited to use with an aircraft.

Appellants' argument that Hooper's system cannot be varied by a controller and thus has no need of Case's controller does not address the proposed combination as articulated by the Examiner. *See* App. Br. 6; Reply Br. 2. Whether Hooper's system has need of a controller is an unpersuasive individual attack on the references because Case's controller (ring controller

---

[4] Appellants' Specification describes the claimed system as minimizing in-plane vibrations. *See e.g.*, Spec. 1:3-4; 2:15-17.

42) is not used for Hooper's system standing alone, rather Case's controller manages the electromagnetic field generation system (plurality of electromagnets 290) of the proposed combination. Ans. 4-5; *see also* Case, col. 12, ll. 53-56; col. 13, ll. 44-46; fig. 4.

Appellants further argue that Case's collet 86 attaches housing 260 to shaft 20, and that such attachment would ruin a function of the Hooper reference in that it is inapplicable for use in a rotary wing aircraft such as Hooper's system. *See* App. Br. 7-9; Reply Br. 2. Appellants' argument is not factually supported by the reference. Appellants are correct that Case discloses that fixturing mechanism 86 may take the form of a collet 86. However, Appellants have ignored that Case also discloses that fixturing mechanism 86 may take various forms, and preferably rigidly affixes the housing 60 to shaft 20.[5] Case, col. 9, ll. 8-16. We fail to see, and Appellants have failed to convincingly explain, how the teaching in Case of rigidly affixing the housing to the shaft would be inapplicable for use in a rotary wing aircraft such as Hooper.

Appellants also argue that Hooper does not disclose the limitation that the electromagnetic field generation system azimuthally varies the viscosity of the MRF and distributes the MRF within the enclosed chamber to reduce a vibratory load in the rotating system. App. Br. 9-10. Appellants add that Case cannot cure this deficiency because Case's housing rotates with shaft

---

[5] Housing 60 of the embodiment depicted in Figures 1 and 2 is analogous to housing 260 of the embodiment depicted in Figure 4 and referred to by Appellants. Case, col. 6, l. 47- col. 11, l. 47 (embodiment of Figures 1 and 2); Case, col. 12, l. 53 – col. 15, l. 52 (embodiment of Figure 4).

20. The proposed combination relies upon Case for the electromagnetic field generation system that azimuthally varies the viscosity of the MRF and distributes the MRF within the enclosed chamber to reduce a vibratory load in the rotating system, and relies upon Hooper for the disclosure of a housing that rotates independently of the rotating system. *See* Ans. 3-4. As such, Appellants' arguments are unpersuasive individual attacks on the references. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) citing *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references).

For each of claims 29-32, Appellants recite the language of each claim and state that the proposed combination does not disclose such a limitation. App. Br. 10-11. We are unpersuaded by these arguments as Appellants have not presented separate arguments for these claims, but have merely pointed out what the claim requires without articulating how the proposed combination does not meet the applicable limitation.[6]

As such, we sustain the rejection of claim 12 and claims 13-17, 20, 21, and 29-32 standing or falling with claim 12.

CONCLUSION

A person of ordinary skill in the art would have combined Hooper and Case as proposed by the Examiner and such a combination would result in the subject matter of independent claim 12.

---

[6] *See* 37 CFR 41.37(c)(1)(vii) ("A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim.").

DECISION

The decision of the Examiner to reject claims 12-17, 20, 21, and 29-32 is AFFIRMED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

nlk

Carlson, Gaskey, & Olds, P.C./Sikorsky
400 West Maple Road, Suite 350
Birmingham, MI 48009